

with automobiles has been revolutionised. So far as I am capable of judging, these articles, as well as those devoted to archery, athletics, cricket, &c., are thoroughly up to date, and, like the rest of the volume, admirably illustrated.

On turning, however, to the articles on big game and big game shooting, I notice that there is a considerable amount of repetition and overlapping, while, worse still, one and the same species of animal is in several instances mentioned in different places under different names. In the case of the reindeer or caribou, for example, the scientific name of the species is given on p. 264 as *Rangifer tarandus*, on p. 399 as *C. (=Cervus) tarandus*, and on p. 401 as *Tarandus rangifer*. Take again the case of the Indian gazelle (*Gazella bennetti*), which is figured, quite unnecessarily, in three different places. The first figure, p. 75, bears the legend "Ravine Deer"—a common sportsman's name—while it is alluded to in the text as the "Chinkara"; on p. 256 the illustration is lettered "Indian Gazelle," while on p. 412 the same figure reappears under the designation "Chickara." Again, the West African dwarf buffalo is designated *Bos caffer nanus* on p. 248, and *Bos pumilus* on p. 319.

These eccentricities in nomenclature are, however, by no means all the defects in the articles under consideration. The chita, or hunting leopard, for example, in addition to being styled *Cynaelurus jubatus* on p. 408, and *Felis jubata* two pages later, is stated on the former to be nearly related to the leopard; and on p. 410, the Indian spotted deer, or chital, is asserted to be a near ally of the fallow deer, despite the fact that the one wears its spotted livery all the year round and the other only in summer. Worse than all, we find on p. 250 a photograph described as that of the western tur (*Capra caucasica*), whereas it is really of the same individual as that depicted on p. 252, under its proper title of tahr (*Hemitragus jemlaicus*).

An error of another kind appears in the first article under the heading bison, which is devoted solely to the American representative of the group, whereas it should have commenced with the European species, which is the bison *par excellence*, the American animal having only a kind of courtesy right to the title.

These and others errors are due, in the first place, to what I regard as the pernicious principle of putting men of different opinions, and in many cases of very different degrees of knowledge, to write on the same subject or branches thereof, and in the second place to the lack of a competent editor to revise and correlate the zoological articles, and thus prevent useless and irritating repetition.

While fully appreciating the value of the work as a whole—which is really a wonderful enterprise—the above and other errors in the big game portion are much to be deplored, more especially as the articles are intended for the use of those who are not professed naturalists.

R. L.

#### WESTERN CHINA.<sup>1</sup>

MR. ARCHIBALD LITTLE'S work, the result of fifty years spent in western China, forms a valuable contribution to our knowledge of that vast region. The volume before us is invested with special interest, as it is the remnant of the labour to which he devoted the greater part of his life. He was at heart an explorer, although in business as a merchant in Chung-keng, much of his time



FIG. 1.—The Hua-Hua Lo at Wuchang, opposite Hankow: one of the most beautiful pavilions in China, unfortunately destroyed by fire. From "Gleanings from Fifty Years in China."

was spent in difficult and dangerous expeditions, which he carried out so successfully as to establish his fame, not only as an intrepid traveller, but as an authority on the western provinces of the empire. He was an exception to the majority of the foreign merchants who meet in China in his having acquired a

<sup>1</sup> "Gleanings from Fifty Years in China." By the late A. Little. Revised by Mrs. A. Little. Pp. xvii + 330. (London: Sampson Low, Marston and Co., Ltd., 1910.) Price 7s. 6d. net.

working knowledge of the language, which proved of service to him in his travels and intercourse with the natives, and in obtaining trustworthy information.

The present volume, unlike its predecessors, is made up of a series of desultory notes or essays written at intervals during his fifty years in Chung-keng, the majority having already appeared in some published form, while the remainder are printed for the first time. Taken together, they form an interesting addition to the author's well-known work, and are published as they were written, no attempt being made to edit or rearrange the material. It is best so, as they are characteristic of the author, who won his way to the hearts of the alien folks among whom he lived and wandered in security for so many years, a people who would fain see the last of the average foreigner, whose aggressive commercialism they do not love.

In his discussion of foreign trade with China the author traverses familiar ground, but he affords some insight into Chinese diplomatic delays in his account of the years spent in fruitless endeavour before

The concluding chapters on the Chinese drama, with examples of native plays, and on Confucianism are new, and sustain the scholarly reputation of the author. A series of excellent photographs add to the attraction of the volume.

J. T.

#### THE CALORIMETRY OF MAN.<sup>1</sup>

A GREAT deal has been said previously as to the general excellence of the methods and apparatus developed in connection with the "respiratory calorimeter" now in use in the Nutrition Laboratory in Boston. That they are original and are carried to a unique degree of perfection, that they have been utilised in the solution of very interesting problems. All this is well known, and will be found frequently dealt with by the authors of the publication referred to below. Gratitude has been freely expressed on these points.

In this recent publication the authors, experienced investigators advantageously equipped for the purpose, have set themselves the task of laying a base line for further calorimetric research. They will receive the thanks of every interested technical observer for the splendid series of data which they have compiled, but they have overhauled them in a manner open to some criticism.

To develop this statement let us take one set of their facts, namely, that the oxygen consumption and heat production of the human being vary during periods of sleep within wide limits when assessed per man, or per kilo of man, or per square metre of the surface of man. Of these three forms of assessment, the last is the most interesting since the loss of heat, and therefore the oxygen consumption and heat production by which it is compensated, is largely conditioned by extent of surface. Now it is of some importance that no surface measurements have been made and that the estimations of surface are really derived from the measurements of weight. The authors refer to this point with some expression of regret, and a promise of contributory data, again of an indirect kind, in future. It would, however, have been of far greater interest had they dealt soundly with their data of

height and weight in such a way as to show with unmistakable clearness that no probable corrections in their surface estimations will account for the differences in heat loss observed. A clear statement that they had found variations not accounted for, and *never likely to be accounted for*, by variations in surface would have been of substantial value.

That this end might have been met by an adequate comparison of the measured heights and weights of their "tall lean men, tall men, short fat men, short men," with average anthropometric data, there can be no doubt whatever. Thus let us take the particular instance of the individual giving the minimum heat loss per man, or per kilo, or per square metre of the surface of man, as compared with the seventeen other individuals whose fortunes can be followed through most of the tabulated statements. His height may best be described as the cube root of his

<sup>1</sup> "The Metabolism and Energy Transformations of Healthy Man during Rest." By F. G. Benedict and T. M. Carpenter. Pp. viii+255. (Carnegie Institution of Washington, 1910.)

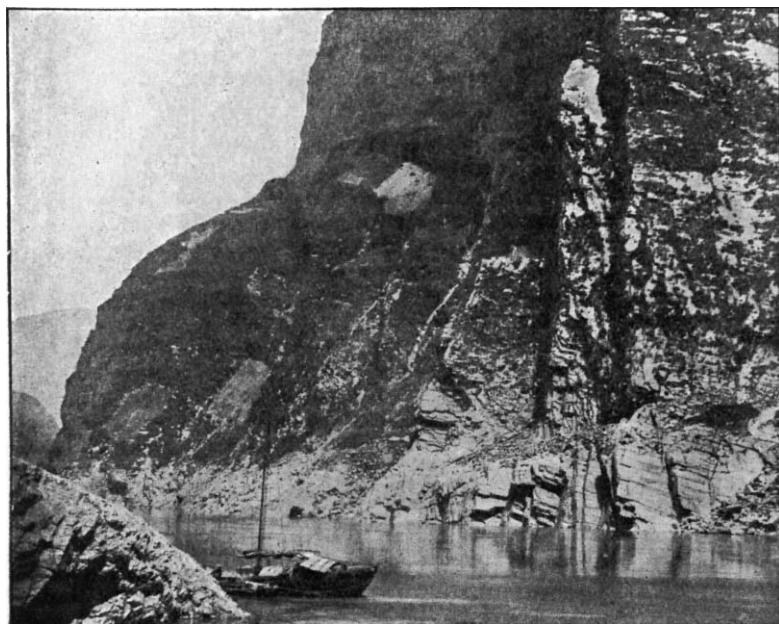


FIG. 2.—A quiet reach on the Upper Yangtse. From "Gleanings from Fifty Years in China."

Chung-keng was thrown open as a treaty port. Mr. Little was the first to take a steamer through the gorges of the Upper Yangtse, a feat so daring and hazardous as to prove what had been foreseen, that the route was impossible for regular steam traffic.

In his historical notes on the provinces from Marco Polo's time, who was the first to describe the region, he states that an interval of some 600 years elapsed before Abbé Huc gave some further account of the country in 1844. He overlooks the claims of Fradelli, Regis, and Bonjour, who, early in the seventeenth century, surveyed and described the western provinces of China, their products, and people.

We can do little more than name some of the other subjects dealt with in the volume—the possible partition of China, China's Christian missions, an essay in which the views expressed may not meet with the approval of those engaged in the work, although he pays a just tribute to the workers as "the promoters of all good in the advance made by China in the past fifty years."